

## **ABSTRACT**

A method and associated system for processing a plurality of replicas of a signal in a signal processing chain, the method includes receiving each of the plurality of replicas of the signal at one of a corresponding plurality of respective antenna elements and orthogonally multiplexing the replicas of the signal on to a single processing chain. The multiplexed replicas are down converted from RF to baseband and converted from an analog to a digital multiplexed signal. The digital multiplexed replicas are then demultiplexed into a plurality of separate signals that correspond to replicas of the signal received at respective ones of the plurality of antennas. In variations, the orthogonal multiplexing includes frequency spreading the replicas of the signal on the single processing chain in accordance with complex Walsh codes. In other variations, the signal replicas are offset in phase by 90 degrees and time multiplexed on the single processing chain.

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